



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 9, 2017

Mr. Bryan C. Hanson
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 1 – SUMMARY OF THE
U.S. NUCLEAR REGULATORY COMMISSION STAFF'S REVIEW OF THE
SPRING 2016 STEAM GENERATOR TUBE INSERVICE INSPECTIONS
(CAC NO. MF8508)

Dear Mr. Hanson:

By letter dated August 29, 2016 (Agencywide Documents Access and Management System Package Accession No. ML16243A487), Exelon Generation Company, LLC (the licensee) submitted information summarizing the results of the spring 2016 steam generator tube inspections performed at the Calvert Cliffs Nuclear Power Plant, Unit 1 (CCNPP1). These inspections were performed during refueling outage 23.

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its evaluation of the steam generator tube inspection report and concludes that the licensee provided the information required by the CCNPP1 Technical Specifications, and no additional followup is required at this time. The results of the NRC staff's review of the report submitted by the licensee are summarized in the enclosed NRC staff's evaluation.

If you have any questions regarding this matter, please contact me at 301-415-1030 or Richard.Guzman@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Guzman", followed by a horizontal line.

Richard V. Guzman, Senior Project Manager
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-317

Enclosure:
Review Summary of the 2016 Steam
Generator Tube Inspections

cc w/enclosure: Distribution via Listserv

REVIEW SUMMARY OF THE 2016
STEAM GENERATOR TUBE INSPECTIONS
CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 1
DOCKET NO. 50-317

By letter dated August 29, 2016 (Agencywide Documents Access and Management System Package Accession No. ML16243A487), Exelon Generation Company, LLC (the licensee) submitted information summarizing the results of the spring 2016 steam generator (SG) tube inspections performed at the Calvert Cliffs Nuclear Power Plant, Unit 1 (CCNPP1). These inspections were performed during refueling outage 23 (RFO 23).

CCNPP1 has two recirculating SGs, designed and fabricated by Babcock and Wilcox, Canada. These replacement SGs, designated as SG 11 and SG 12, were installed during refueling outage (RFO) 15 in 2002. Each SG contains 8,471 tubes made from thermally treated Alloy 690 material. Each tube has a nominal outside diameter of 0.75 inches and a nominal wall thickness of 0.042 inches. The SGs have a triangular tube pitch arrangement with 1-inch spacing between tube centers. The tubes are hydraulically expanded the entire depth of the tubesheet. Rows 1-18 of the U-bend received a stress relief heat treatment after bending.

The licensee provided the scope, extent, methods, and results of its SG tube inspections in the document referenced above. In addition, the licensee described corrective actions, such as tube plugging, taken in response to the inspection findings. The tubes in both SGs were inspected this outage.

After reviewing the information provided by the licensee, the U.S. Nuclear Regulatory Commission (NRC) staff has the following comments and observations:

- The licensee reported 263 indications of tube wear from fan bars in SG 11 and 293 indications of tube wear from fan bars in SG 12. Of the 556 total indications of fan bar wear, 113 were newly reported in RFO 23 (73 in SG 11 and 40 in SG 12).
- The licensee reported 8 indications of tube wear from lattice grid supports. There were 5 indications in 5 tubes in SG 11 and 3 indications in 3 tubes in SG 12. Three of these indications had been reported in RFO 21.
- Six foreign object wear indications were reported in 5 tubes in SG 11, and 9 foreign object wear indications were reported in 9 tubes in SG 12. Except for 1 indication, all indications were confirmed by eddy current and/or visual examination to be not associated with a loose part present. One loose part was identified, but it was not in contact with any tubes. The tube closest to the loose part was preventatively stabilized and plugged, since the location of the tube did not allow retrieval of the loose part.

Principal Contributor: Andrew B. Johnson, NRR

Date: February 9, 2017

Enclosure

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 1 – SUMMARY OF THE U.S. NUCLEAR REGULATORY COMMISSION STAFF'S REVIEW OF THE SPRING 2016 STEAM GENERATOR TUBE INSERVICE INSPECTIONS (CAC NO. MF8508) DATED FEBRUARY 9, 2017

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**by memo dated*

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